



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Handwritten signature

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/649,731

08/28/2003

Yoshiaki Fukuzumi

241999US2S

5707

22850

7590

01/10/2006

OBLON, SPIVAK, MCCLELLAND, MAJER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ROSE, KIESHA L

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,731

Applicant(s)

FUKUZUMI, YOSHIAKI

Examiner

Kiesha L. Rose

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 12-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/12/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the RCE filed 27 October 2005.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7,14,17,18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butt (U.S. Patent 4,524,238) in view of Stobbs (U.S. Publication 2004/0150091) and Miyahara (U.S. Patent 5,629,559).

Butt discloses a semiconductor package (Figs. 1 and 6) that contains a semiconductor chip (12), an enclosure which seals the chip and has a base material (16) and cap material (24) joined together by sealing material, a magnetic film (92) provided on a chip side surface of the base material and on an inner surface of the cap material so as to surround the chip. The cap is coated with a thin refractory oxide layer, which is the magnetic film. (Column 3, lines 62-65) The enclosure is ceramic where the ceramic package contains Al₂O₃, a leadframe comprising a die pad which the chip is mounted, an inner lead portion (22) sealed by the enclosure, an outer lead portion (23) out of the enclosure, where the inner lead portion has a stacked structure in which a plurality of conductive layers are stacked via insulating layers. Butt discloses all

Art Unit: 2822

the limitations except for the chip to comprise a magnetic element. Whereas Stobbs discloses a magnetic random access memory (Fig. 2) that contains a semiconductor chip (13) comprising a magnetic element, an enclosure (22) which seals the magnetic chip and substantially spherical magnetic substance particles which are interspersed in the enclosure, where the enclosure is a plastic package containing either epoxy resin or silicone resin. The semiconductor chip contains a magnetic element to function as a magnetic chip that uses magnetic charges to store bits of data. (Page 1, Paragraph 3) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Butts by incorporating a magnetic chip to use magnetic charges to store bits of data in a magnetic random access memory device as taught by Stobbs. Butt and Stobbs disclose all the limitations except for the plurality of conductive layers to be electrically connected to corresponding external connection electrodes on chip by bonding wires. Whereas Miyahara discloses a semiconductor device (Fig. 15) that contains a chip (32), a lead frame with an inner lead portion where the inner lead portion has a plurality of conductive layers (51-53) with insulating layers (74) formed therebetween, where the plurality of conductive layers are electrically connected to corresponding external connection electrodes on the chip by bonding wires (42). The plurality of conductive layers is electrically connected to the electrodes of the chip to form electrical connections to from the chip to the power, ground and signal layers. (Column 9, lines 47-67) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the devices of Butts and Stobbs by incorporating the conductive layers to be electrically

Art Unit: 2822

connected to the electrodes of the chip to form electrical connections to from the chip to the ground and signal as taught by Miyahara.

Claims 12,13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butt, Stobbs and Miyahara and further in view of Hirai (U.S. Publication 2002/0131296).

Butt, Stobbs and Miyahara disclose all the limitations except for the memory element to be a tunnel magneto-resistance element. Whereas Hirai discloses a magnetic random access memory that discloses a memory chip that is a tunnel magneto-resistance element. The memory chip is a tunnel magneto-resistance element so that the electric resistance of the magnetic material is changed according to the direction of the magnetization or the existence of the magnetization for the MRAM. (Page 1, Paragraph 4) Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the devices of Butt, Stobbs and Miyahara by incorporating the magnetic element to be a tunnel magneto-resistance element so that the electric resistance of the magnetic material is changed according to the direction of the magnetization or the existence of the magnetization for the MRAM as taught by Hirai.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butts, Stobbs and Miyahara.

Butts, Stobbs and Miyahara disclose the claimed invention except for the magnetic substance particles to have a diameter of 20 microns or less or them to occupy 1 wt% or more of the enclosure. It would have been obvious to one having

Art Unit: 2822

ordinary skill in the art at the time the invention was made to have the magnetic substance particles to have a diameter of 20 microns or less or them to occupy 1 wt% or more of the enclosure, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. (1955)


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiesha L. Rose whose telephone number is 571-272-1844. The examiner can normally be reached on T-F 8:30-6:00 off Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KR
KLR


ZANDRA V. SMITH
SUPERVISORY PATENT EXAMINER
@ January 2004